

Work Order ID 153386

153386

Page 1

Monday, November 21, 2016 11:19:36 AM

Item ID: D412-664-203

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube - High

Start Date: 11/21/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/5/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

DAS

21

Date: NOV 22 2016

Tooling:

Date:

Run Start

NR1

QC:

DAS

9-89

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D412-664-243

F

100

Document Control

FEB 28 2017

0.00

100

DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels as per PPP D412-664-203 CHG 010

110

0.00

110

Packaging

Packaging

Memo

0.53

Packaging

120

0.05

120

CNC Bend 2

BENDING MACHINE - CROSSTUBES

Memo

0.17

CNC Alpha 160 Bender

Bend tube as per Dwg D412-664-243 using CNC bender program 412-aft and Folio FT010

D412-664-203/153386

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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Run Start

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Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

QC15- Crosstube Dimensional Check

0.00

130

QC

Memo

0.00

Quality Control

DAS
3E
9-89

MAR 03

140

Crosstubes

0.00

140

Crosstubes

Memo

0.22

Crosstubes

1-Drill pilot holes in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551 and drill table DT8577 using #9 holes as per QSI 10 to install towers.

2-Ream hole to finish size in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-SCRIBE PART # & BATCH #
ACCORDING TO NOTE 64- *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Deburr
& Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243DP2 17-02-10
VE

DQA: _____ Date: _____



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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

0.00

160

HandFXtube

Memo

0.08

Hand Finishing Crosstubes

IMMEDIATELY AFTER GRINDING

1- PRESSURE WASH X-TUBE INSIDE AND OUT

2- ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT AS PER QSI005.

DR 17-02-15

165

QC7-Inspect Chemical Conversion Coat

0.00

165

QC

Memo

0.00

Quality Control

1 DAS 38 9-99 FEB 16 2017

170

QC5- Inspect part completeness to step on W/O

0.00

170

QC

Memo

0.00

Quality Control

INSPECT ENGRAVING AND BATCH # 153386

1 DAS 38 9-99 FEB 16 2017

DQA: _____ Date: _____



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Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
				OTHER : _____			

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Run Start

NR1

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Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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180

Outsource process - NDT per QSI038 4.1

0.00

180

Outsource2

Memo

30.00

Outsource process - NDT

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Liquid Penetrant Inspection as per QSI 038Or
Issue P/O: 35333 LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order1 FEB 17 2017 DAS 13 5-69

190

Packaging

0.00

190

Packaging

Memo

0.02

Packaging

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Inspect for transit damage
Ensure copy of NDT results attached to work order.1x SPT 17-02-17

200

QC5- Inspect part completeness to step on W/O

0.00

200

QC

Memo

0.00

Quality Control

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Inspect for damage & ensure results are as per Dwg D412-664-203

1 17-02-17 EB

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

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								Completed By	
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Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

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Tooling:

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Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

0.00

210

SprayPaint

SprayPaint

Memo

0.08

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

VERIFY BY 41BATCH # TO MATCH W/O 153386*VERIFY BY 9-89 PART # TO MATCHW/O 153386

MASK SCRIBE B# & P# AND VERIFY

Mask underside of crosstube as shown

1-Prime inside and outside crosstube as per QSI 005 4.2 AND DWG

PRIMER: 136615START TIME: 1000FINISH TIME: 1100

2-Paint outside crosstube with White Imron as per DWG D412-664-243 and QSI 005 4.2

PAINT: 136731Start Time: 700Finish Time: 800

3- Apply clear coat after paint as per DWG

136205

DAS

41

9-89

17-2-17

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

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NR1

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SPC (Y/N):

Date:

Stop

NR2

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Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

QC14- Inspect Spray Paint

0.00

220

QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

1

Das
38
9-89

FEB 27 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Plan
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QtyReject
QtyReject
NumberInsp.
Stamp

230

0.00

230

Crosstubes

Crosstubes

Memo

0.21

Assemble as per Dwg D412-664-203

1- Install center support using scoth-weld DP460 per QSI 015, as per DWG. note 13. Install supports clamps using as per Dwg D412-644-243. Install clamp with rubber cushion as per DWG. note 14. ***ENSURE CLAMPS ARE ON TOP OF CROSSTUBE SUPPORT*** Torque clamps on support to 80-100 IN-LBS AS PER DWG.

A/R scoth-weld DP460

BATCH #: 134469EXP DATE: 4/17

2- **IF NOT ALREADY PRESENT ON CHAFFING SHEILD.** Apply a thin coat of proseal 890 per QSI 015 on inside concave surface of chafing shield and let cure per manufacturer's instructions. Install prosealed chafing shield onto crosstube by applying a thin coat of proseal 890 onto crosstube. Be sure to eliminate any air gaps. Install and torque clamps on chafing shield to 40-50 IN-LBS AS PER DWG.

A/R Proseal 890

Batch: 136665EXP DATE: 8/17

AFTER FINISH CURE TIME 24H

START CURE TIME: 17-2-21FINISH CURE TIME: 17-2-22

PRIOR TO PACKAGING RE-CHECK TORQUE ON CLAMPS AFTER CURED FOR 24H.

DAS
41
9-89
17-2-21

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Description Work Order Deviation				Disposition					
240 FD 08-10									
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Work Order ID 153386***153386***

Page 8

Monday, November 21, 2016 11:19:37 AM

Item ID: D412-664-203

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube - High

Start Date: 11/21/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/5/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00

240

QC

Memo

0.00

Quality Control

***RE-CHECK TORQUE ON CLAMP AFTER PROSEAL HAS CURED
FOR 24HOURS AS PER DWG.***DAS
38
9-89
FEB 27 2017

250

Pick Kit

0.00

250

Packaging

Memo

0.04

Packaging

DAS
27
9-89
FEB 28 2017

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.01

Quality Control

DAS
28
9-89
FEB 28 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 153386***153386***

Page 9

Monday, November 21, 2016 11:19:37 AM

Item ID: D412-664-203

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Aft Crosstube - High

Start Date: 11/21/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/5/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

0.00

270

Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPP D412-664-203

*****Ensure tube is not packaged if curing time is less than 12 hrs, see step 27

for application time & date *****

Time & date of packaging: _____

Location: _____

fs 093

DAS
27
9-89

MAR 02 2017

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.02

DAS
21
9-89~~MAR 03 2017~~

MAR 07 2017

Quality Control

DAS
21
9-89
MAR 03 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Picklist Print

Monday, November 21, 2016 11:19:40 AM

Page 1

Work Order ID: 153386

153386

Parent Item: D412-664-203

D412-664-203

Parent Item Name: Aft Crosstube - High

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:E04.02.16Reformat; Added D3189-1K/DS
IPP Rev:F 06-03-29 Remove Coments on Pick List JLM
IPP Rev:G 06.12.08 per ECN 886 EC
IPP Rev:H 07-04-30 As per Rev D JLM
IPP Rev:I 08-06-12 add comment in seq. 21 DD verified by:EC IPP rev J
11.04.21 DEO D412-664-243-E-1 EC verified DD IPP REV:K
11.10.03 DEO D412-664-243-E-2 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN6-40A

Purchased

No

250

Each

96.0000

4

4

AN6-40A

3/8-24 Bolt X 3" Long

**

DAS
6
9-89

FEB 28 2017

DAS
27
9-89

Location

Loc Qty

Loc Code

over005

60

M135948

30

M135979

30

ST333

36

M133769

4

M134509

2

M135297

30

AN6-41A

Purchased

No

250

Each

52.0000

2

2

AN6-41A

Bolt

**

DAS
6
9-89

FEB 28 2017

DAS
27
9-89

Location

Loc Qty

Loc Code

over005

40

M135767

20

M135966

20

ST333

12

M134508

12

DAS
33
9-89

DAS
28
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Monday, November 21, 2016 11:19:40 AM

Work Order ID: 153386

153386

Parent Item: D412-664-203

D412-664-203

Parent Item Name: Aft Crosstube - High

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

D2896-1 Manufactured No

230 Each

13.0000 1 1

DAS
41
9-89

17-2-21

D2896-1

Support

**

Location

Loc Qty

Loc Code

LG051

13

145014

4

148418

9

1

D3189-1 Manufactured No

230 Each

28.0000 2 2

DAS
41
9-89

17-2-21

D3189-1

Chaffing Shield

**

Location

Loc Qty

Loc Code

LG051

28

152176

10

152560

8

152739

10

2

D3595-063-570 Manufactured No

230 Each

63.0000 2 2

DAS
41
9-89

17-2-21

D3595-063-570

Rubber Cushion 0.63" wide x 5.70" Long

**

Location

Loc Qty

Loc Code

FG

8

42243

8

LG052

55

144834

27

152228

28

2

D412-664-203TRN Manufactured No

110 Each

0.0000 1 1

1

D412-664-203TRN

Crosstube Turning Detail

**

B155211

17-08-09

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. 340 F2		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : 03/11		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
340 F2 03/11 340 F2 03/11								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Picklist Print

Monday, November 21, 2016 11:19:40 AM

Work Order ID: 153386

153386

Parent Item: D412-664-203

D412-664-203

Parent Item Name: Aft Crosstube - High

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

MS21042L6

Purchased

No

250

Each

312.0000

6

6

MS21042L6

Nut

**

DAS
6
9-89

DAS
27
9-89

FEB 28 2017

DAS
28
9-89

Location

Loc Qty

Loc Code

OVER007

100

m135979

100

ST303

212

m135442

12

m135704

100

m135864

100

136579

MS21920-28

Purchased

No

230

Each

91.0000

4

4

MS21920-28

Clamp

**

DAS
41
9-89

17-2-21

136512

Location

Loc Qty

Loc Code

FG

1

105884

1

LG050

73

M135774

23

M135859

50

LG051

1

M132169

1

LG057

2

M134130

2

st543

14

M135009

14

4

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Page 4

Monday, November 21, 2016 11:19:40 AM

Work Order ID: 153386

153386

Parent Item: D412-664-203

D412-664-203

Parent Item Name: Aft Crosstube - High

Start Date: 11/21/2016

Required Date: 12/5/2016

Start Qty: 1.00

Required Qty: 1.00

MS21920-30

Purchased

No

230

Each

35.0000

2

2

DAS

41

9-89

17-2-21

MS21920-30

Clamp

**

Location

Loc Qty

Loc Code

LG57

35

m131689

2

m134257

13

m135127

20

2

NAS1149D0663J

Purchased

No

250

Each

680.0000

18

18

DAS

6

9-89

DAS

27

9-89

FEB 28 2017

NAS1149D0663.J

Washer

**

Location

Loc Qty

Loc Code

ST260a

500

M135948

500

ST263

180

M135464

180

136192

DAS
28
9-89

Monday, November 21, 2016 11:19:40 AM

Shop Packet Print

Page 4

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

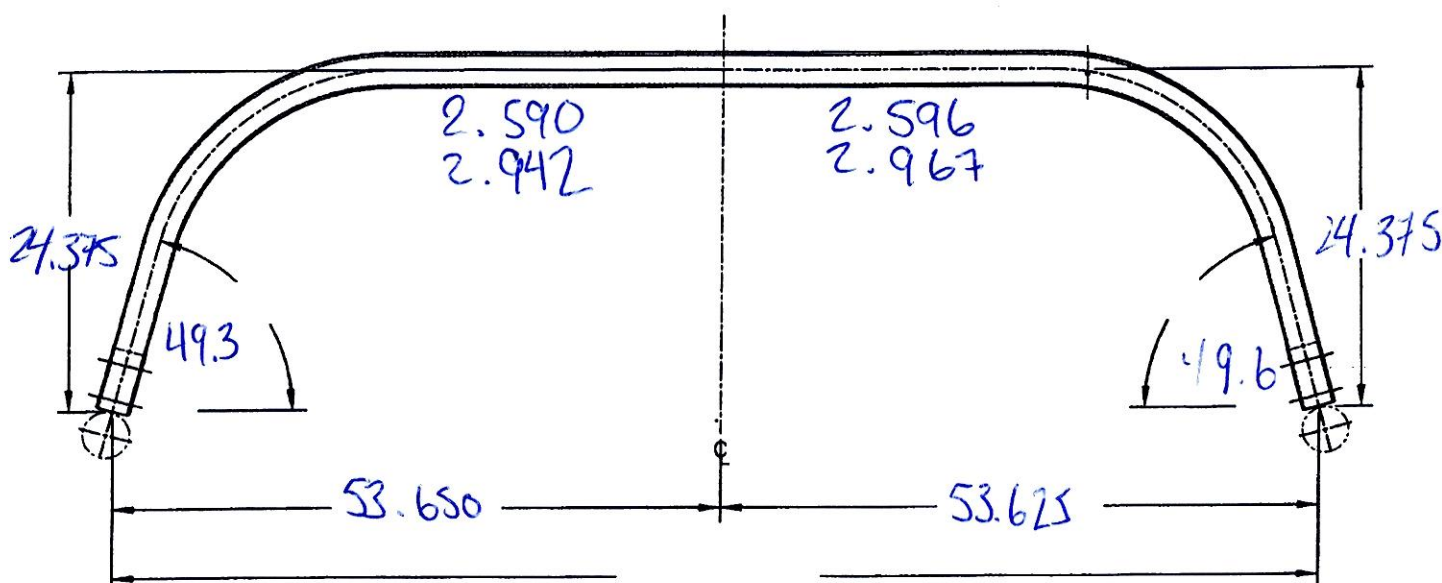
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DART AEROSPACE LTD	Work Order: 153386
Description: Crosstube High Aft (412)	Part Number: D412-664-203
Inspection Dwg: D412-664-243 Rev: F	Page 1 of 1

Required Dimension	Min	Max
Height	24.12	24.62
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70
Bending Passes	8	--
Crushing	--	7%



	Side A	Side B
Bending Passes	9	9
Crushing	6.3%	6.7%
Comments		

QC15 Inspection	DAS 38 9-89
Date	MAR 03 2017

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. D	KJ/JLM	
C	10.02.02	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	
E	14.09.08	Max crushing % revised	KJ	

Item	Qty	Part Number	Description
1	X	D412-664-243	CROSSSTUBE ASSEMBLY (412 HIGH AFT)
2	1	D6009-129	CROSSSTUBE
3	2	D3695-063-570	RUBBER CUSHION
4	1	D2696-1	SUPPORT
5	2	D3189-1	CHAFING SHIELD
7	4	MS21920-28	CLAMP
8	2	MS21920-30	CLAMP (OR MS21920-32)
9	A/R	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD
10	A/R	PROSEAL 890 B-2	SEALANT

GENERAL NOTES:

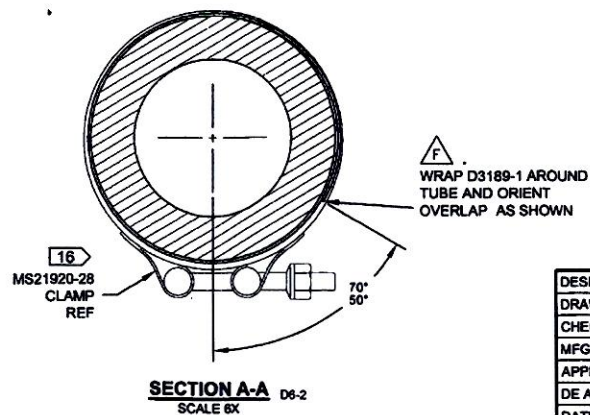
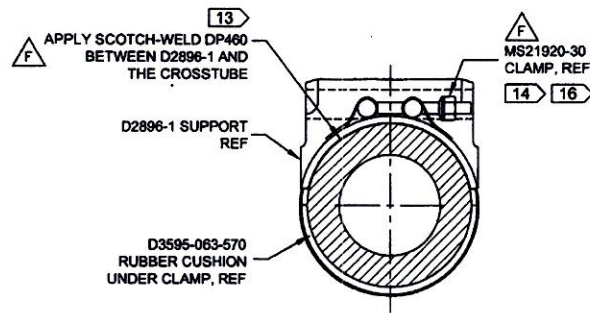
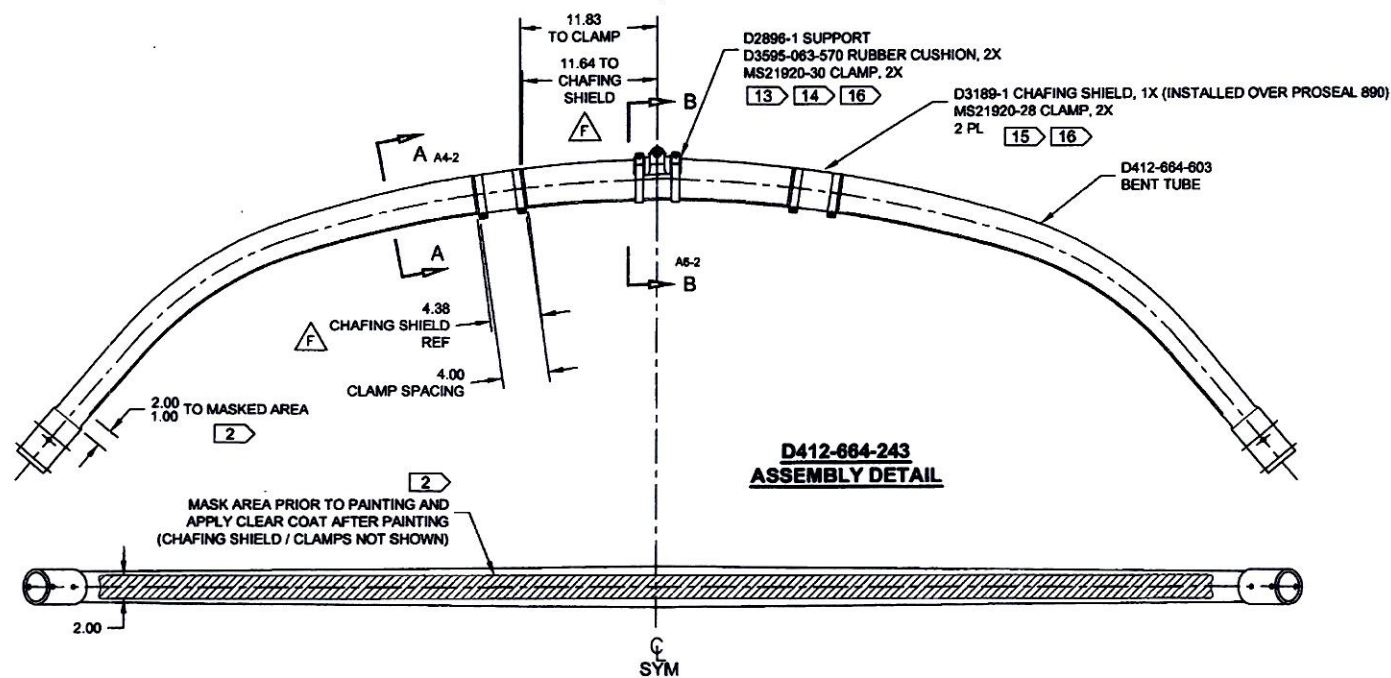
- MATERIAL: MANUFACTURED FROM D6009-129
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
FINISHED LENGTH = 124.100±0.020 (BEFORE BENDING)
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED.
AFTER PAINTING, REMOVE MASKING AND APPLY MATTE CLEAR COAT
PAINT OUTSIDE PER DART QSI 005 4.2
MASK UNDERSIDE OF CROSSSTUBE AS SHOWN (ZN C8-2, HATCHED AREA)
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
- IDENTIFICATION: DART P/N "D412-664-243" AND B/N ON INSIDE OF CUFF PER QSI 044 6.4 (VBRATING STYLUS)
- WEIGHT: 47.0 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
- CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. DO NOT GRIND TUBE AFTER SHOT PEEN.

- TURNING
- WHEN TRANSITIONING TO STOCK MATL, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- BENDING
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7% (BASED ON O.D.) IN LOWER HALF OF R30 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- LIQUID PENETRANT INSPECT OUTSIDE OF CROSSSTUBE PER QSI 038. TO BE PERFORMED AFTER FINAL POST-BEND GRINDING. ANY ADDITIONAL GRINDING REQUIRES ANOTHER LPI INSPECTION.
- ASSEMBLY
- INSTALL D2696-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015.
- INSTALL MS21920-30 CLAMPS (OR -32) WITH D3695-063-570 RUBBER CUSHIONS TO SECURE THE D2696-1 SUPPORT ON TOP SIDE OF THE CROSSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSSTUBE.
- APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3189-1 CHAFING SHIELD AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEAL D3189-1 CHAFING SHIELD ONTO CROSSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- TORQUE CLAMPS ON D2696-1 SUPPORT 80 TO 100 IN-LB. TORQUE CLAMPS ON D3189-1 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVES HAVE CURED FOR 24 HOURS.

REV. F	DATE	14.04.01
SHEET 1 OF 4	DE APPR.	
SCALE	APPROVED	
CROSSSTUBE ASSEMBLY (412 HI AFT)	MFG. APPR.	
D412-664-243	CHECKED	
DRAWING NO.	DRAWN	
DART AEROSPACE LTD	DESIGN	
HAWKESBURY, ONTARIO, CANADA	DESCRIPTION	
BY	REV.	
PH	A	NEW ISSUE
PH	B	ADD HOLES FOR COMPATIBILITY WITH BHT/AA
MB	C	REMOVE D2696-1 CLAMP, ADD D2732-058 & MAGNOBOND 6396, MS21920-32 WAS MS21920-30
PH	D	REMOVE D2732-058, CHANGE TO D3695-063-570
RF	E	REFORMAT/REVISE GENERAL NOTES: PAR 08-046 (ZN A8-3): ADD TOLERANCE (ZN B6-3, C4-3, C8-11) CHAFING SHIELD NOW 4.38 WIDE (C6-2). ADD 7% CRUSHING (B8-1) CHG BEND HEIGHT TOL. TO ±0.25 (C1-3) CHG CUFF TOL. (D2-4) CLAMPS FLIPPED TO PREVENT CHAFING (B7-2, B7-3), INCOMP. DEO E-244
CP	F	NOTES RE-ORDERED, SCOTCH-WELD WAS MAGNOBOND (C8-1). ADD CLAMP RETORQUE (A8-1). REMOVE ABRASION STRIP, ADD INSPECTION WINDOW (C8-11). CHAFING SHIELD NOW 4.38 WIDE (C6-2). ADD 7% CRUSHING (B8-1) CHG BEND HEIGHT TOL. TO ±0.25 (C1-3) CHG CUFF TOL. (D2-4) CLAMPS FLIPPED TO PREVENT CHAFING (B7-2, B7-3), INCOMP. DEO E-244
14.04.01		

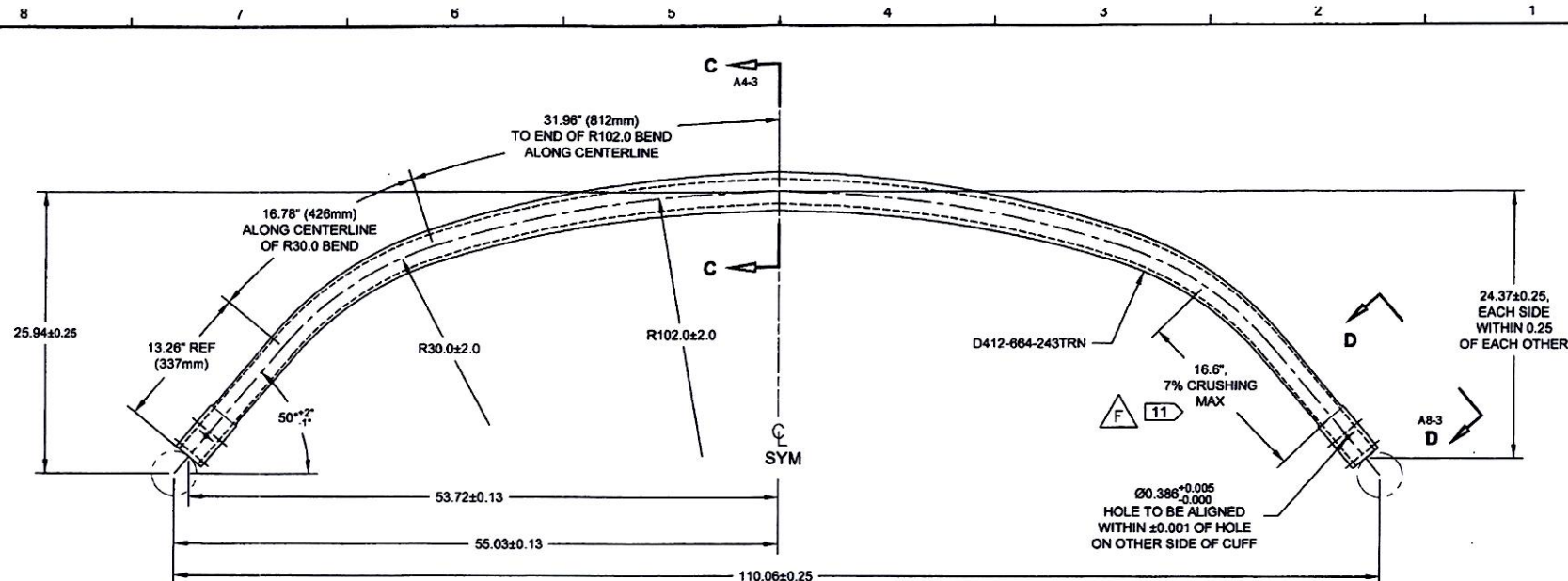
RELEASED
2014-05-26

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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 153386
16-11-22

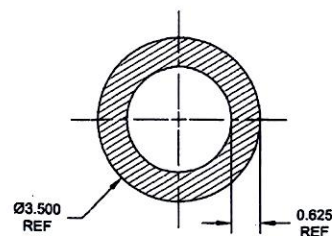
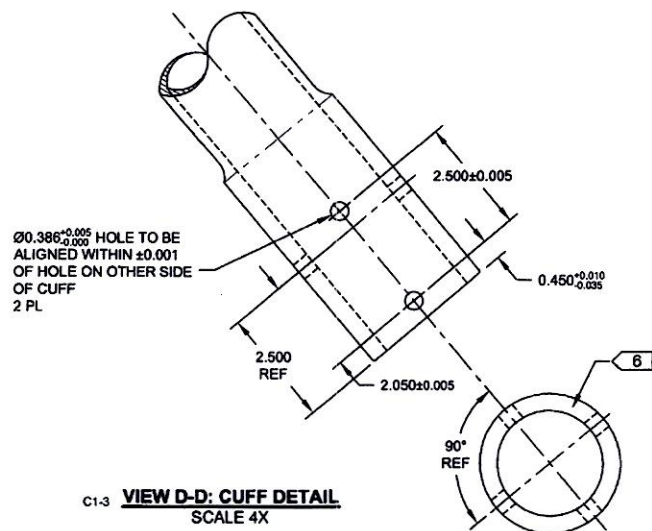


RELEASED
2014-05-26
ND

DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		DRAWING NO. D412-664-243	REV. F SHEET 2 OF 4
CHECKED		TITLE CROSSTUBE ASSEMBLY (412 HI AFT)	SCALE NTS
MFG. APPR.		COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
APPROVED		DATE	14.04.01
DE APPR.			

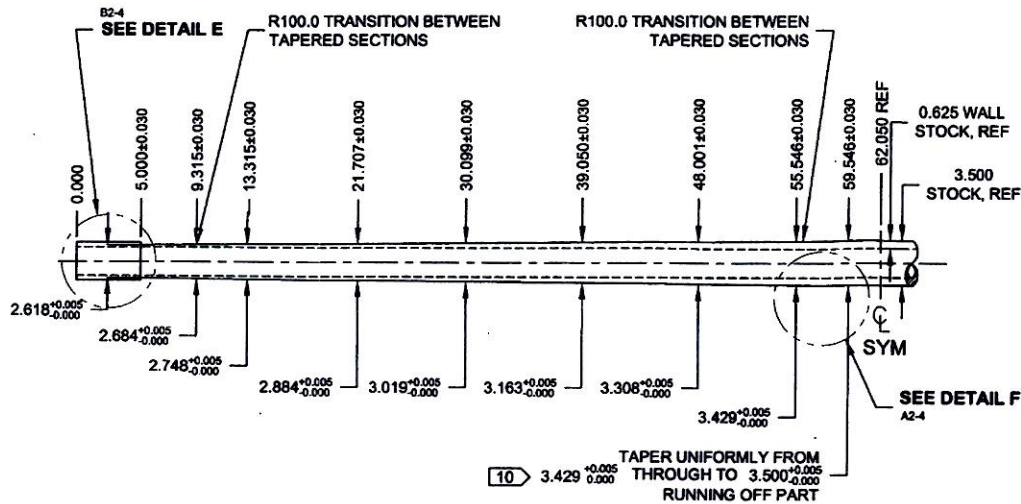


D412-664-603
BENDING AND DRILLING DETAIL

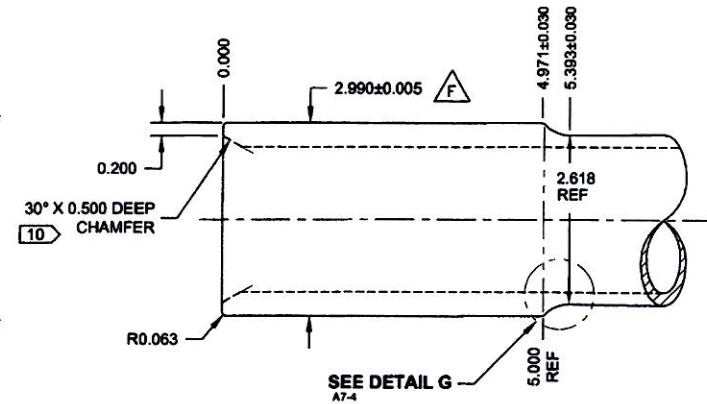


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2014-05-26

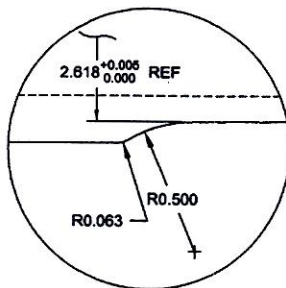
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DRAWN	<i>DP</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>DW</i>	DRAWING NO.	REV. F
MFG. APPR.	<i>DP</i>	D412-664-243	SHEET 3 OF 4
APPROVED	<i>DP</i>	TITLE	SCALE
DE APPR.	<i>DP</i>	CROSSTUBE ASSEMBLY (412 HI AFT)	NTS
DATE	14.04.01	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



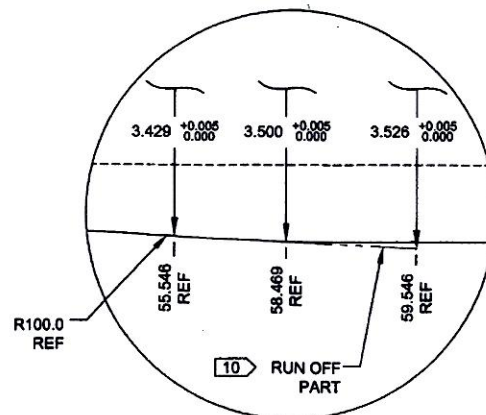
D412-664-243TRN
TURNING DETAIL



DETAIL E:
CROSSTUBE CUFF D8-4
SCALE 5X



DETAIL G:
CUFF TRANSITION C2-4
SCALE 10X



DETAIL F:
TAPER RUN-OFF C4-4
NOT TO SCALE

RELEASED
2014-05-26
MD

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D412-664-243	REV. F
MFG. APPR.		SHEET 4 OF 4	
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASSEMBLY (412 HI AFT)	
DATE	14.04.01	NTS	

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35333**

Purchase Order Date 2/16/2017

PO Print Date 2/17/2017

Page Number 2 of 4

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone
Ship Via: Delivered
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Total: \$0.00

3	152056	D412-596-203 CROSSTUBE	2/22/2017	1.00	\$0.00	\$0.00
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Yes
2/22/2017

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$0.00

4	152058	D412-596-203 CROSSTUBE	2/22/2017	1.00	\$0.00	\$0.00
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Yes
2/22/2017

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$0.00

5	153386	D412-664-203 CROSSTUBE	2/22/2017	1.00	\$0.00	\$0.00
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Yes
2/22/2017

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Note:

2/17/2017

SP 170217



skyservice Work Order Traveler

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO31154	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO35333
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT (LIQUID PENETRANT) ON THE FOLLOWING SEVEN (7) CROSSTUBES:

ID# D412-664-203 AFT CROSSTUBES-HIGH

1 WORK ORDER ID 156367 2 WORK ORDER ID 153386
3 WORK ORDER ID 153383 4 WORK ORDER ID 156885

ID# D212-664-107 FWD CROSSTUBES-LOW STANDARD

5- WORK ORDER ID 155632

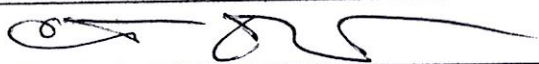
ID# D412-596-203 STAINLESS STEEL AFT CROSSTUBES

6 WORK ORDER ID 152056 7 WORK ORDER ID 152058

Sp1702-17

Action Taken:						Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-7) AS PER ASTM1417 M-13						<i>16 Feb 2017</i>	 <i>C</i>
NO CRACK FOUND							
PEN.(ZL-56, MPO13600), DEV.(SKD-S2, MPO11715), CLEANER(SKC-S, MPO13923)							
BLACK LIGHT USED: SER# M-20188							
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: <i>16 Feb 2017</i>
Name: CHRISTIAN BRIEN		